UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
MANOSKEY, JOSEPH D

ART UNIT	PAPER NUMBER
2113	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/043,038	CAMPBELL ET AL.
	Examiner	Art Unit
	Joseph Manoskey	2113

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>18 October 2004</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5, 7-16, 18--27, and 29-33* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-16,18-27 and 29-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>12 March 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claim 1-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Frey, Jr.

et al., U.S. Patent 5,201,044, hereinafter referred to as "Frey".

3.   Referring to claim 1, Frey teaches a file-based transaction system that includes

transaction log, this is interpreted as a method for logging file system operation (See

Col. 1, lines 9-12). Frey discloses the system performing file transactions using user-

inaccessible software, this is interpreted as receiving a request to perform a file system

operation and making a call to an underlying file system to perform the file system

operation (See Col. 3, lines 22-43). Finally Frey teaches the use of a transaction log file

to keep track of the progress of all pending transactions and the log file can be used to

reconstruct in case of a failure of the system, this is interpreted as logging the file

system operation to a log within a log device to facilitate recovery of the file system

operation in the event of a system failure before the file system operation is committed

to non-volatile storage (See Col. 4, line 53 to Col. 5, line 10).

Frey also discloses the types of transactions including a distributed type of transaction that includes several nodes and each server maintains its own independent log, this is seen as each server has a log file that records all the information of the distributed transactions, which includes the transaction information that occurs on separate servers (See Col. 5, lines 53-56). This is interpreted as request to perform the file system operation is received at a primary server in a highly available system, the log is located on a secondary server that is separate from the primary server in the highly available system, and that acts as a backup for the primary server.

4.   Referring to claim 2, Frey discloses the use unique identification numbers for the transactions in the log (See Col. 5, lines 34-35).

5.   Referring to claim 3, Frey teaches the use of a commit procedure, this is interpreted as freezing ongoing activity and making a call to the file system to flush memory buffers to non-volatile storage, which guarantees operations are committed to non-volatile storage and later unfreezing ongoing activity (See Col. 5, lines 23-33). Frey also teaches that all old completed transactions are discarded, this is interpreted as removing outstanding file system operations from the log (See Col. 5, lines 11-12).

6.   Referring to claim 4, Frey discloses a recovery procedure that involves reading the log file, this is interpreted as upon a subsequent computer system startup examining

the log within the log device (See Col. 9, lines 38-39). Frey also teaches the log file

being used to reconstruct the system, this is interpreted as replaying any file system

operations from the log that have not been committed to non-volatile storage (See Col.

5, lines 4-7).

7.   Referring to claim 5, Frey teaches defining the sequence of actions to be carried

out in the transaction, this is interpreted as checking for dependencies between file

system operations and ongoing file system operations, and if detected ensuring

completion is done in an order that satisfies the dependencies (See Col. 5, lines 41-43).

8.   Referring to claim 7, Frey teaches the use unique identification numbers for the

transactions in the log (See Col. 5, lines 34-35), and defining the sequence of actions to

be carried out in the transaction, this is interpreted as associating the file system

operation with a transaction identifier for a set of related file system operations and

wherein logging the file system operation involves storing the file system operation with

the transaction identifier to the log device (See Col. 5, lines 41-43).

9.   Referring to claim 8, Frey discloses logging transactions and defining the

sequence of actions to be carried out in the transaction, (See Col. 5, lines 3-4 and lines

41-43). This is interpreted as determining if the file system operation belongs to a

subset of file system operations that are subject to logging and if so, logging the file

system operation.

10.   Referring to claim 9, Frey teaches subset including operations such as parity

update (See Col. 5, lines 41-43). A parity update will be deferent every time you

perform the operation because the data is different, this is interpreted as the operation

being non-idempotent.

11.   Referring to claims 10 and 11, Frey teaches the log file spanning both volatile

and non-volatile memory (See Col. 3, lines 31-32).

12.   Referring to claim 12, Frey teaches a file-based transaction system that includes

a transaction log and software for performing the system, this is interpreted as a

computer-readable storage medium storing instructions when executed by a computer

to perform a method for logging file system operation (See Col. 1, lines 9-12). Frey

discloses the system performing file transactions using user-inaccessible software, this

is interpreted as receiving a request to perform a file system operation and making a

call to an underlying file system to perform the file system operation (See Col. 3, lines

22-43). Finally Frey teaches the use of a transaction log file to keep track of the

progress of all pending transactions and the log file can be used to reconstruct in case

of a failure of the system, this is interpreted as logging the file system operation to a log

within a log device to facilitate recovery of the file system operation in the event of a

system failure before the file system operation is committed to non-volatile storage (See

Col. 4, line 53 to Col. 5, line 10).

Frey also discloses the types of transactions including a distributed type of

transaction that includes several nodes and each server maintains its own independent

log, this is seen as each server has a log file that records all the information of the

distributed transactions, which includes the transaction information that occurs on

separate servers (See Col. 5, lines 53-56). This is interpreted as request to perform the

file system operation is received at a primary server in a highly available system, the log

is located on a secondary server that is separate from the primary server in the highly

available system, and that acts as a backup for the primary server.

13.   Referring to claim 13, Frey discloses the use unique identification numbers for

the transactions in the log (See Col. 5, lines 34-35).

14.   Referring to claim 14, Frey teaches the use of a commit procedure, this is

interpreted as freezing ongoing activity and making a call to the file system to flush

memory buffers to non-volatile storage, which guarantees operations are committed to

non-volatile storage and later unfreezing ongoing activity (See Col. 5, lines 23-33). Frey

also teaches that all old completed transactions are discarded, this is interpreted as

removing outstanding file system operations from the log (See Col. 5, lines 11-12).

15.   Referring to claim 15, Frey discloses a recovery procedure that involves reading

the log file, this is interpreted as upon a subsequent computer system startup examining

the log within the log device (See Col. 9, lines 38-39). Frey also teaches the log file

being used to reconstruct the system, this is interpreted as replaying any file system

operations from the log that have not been committed to non-volatile storage (See Col.

5, lines 4-7).

16.   Referring to claim 16, Frey teaches defining the sequence of actions to be

carried out in the transaction, this is interpreted as checking for dependencies between

file system operations and ongoing file system operations, and if detected ensuring

completion is done in an order that satisfies the dependencies (See Col. 5, lines 41-43).

17.   Referring to claim 18, Frey teaches the use unique identification numbers for the

transactions in the log (See Col. 5, lines 34-35), and defining the sequence of actions to

be carried out in the transaction, this is interpreted as associating the file system

operation with a transaction identifier for a set of related file system operations and

wherein logging the file system operation involves storing the file system operation with

the transaction identifier to the log device (See Col. 5, lines 41-43).

18.   Referring to claim 19, Frey discloses logging transactions and defining the

sequence of actions to be carried out in the transaction, (See Col. 5, lines 3-4 and lines

41-43). This is interpreted as determining if the file system operation belongs to a

subset of file system operations that are subject to logging and if so, logging the file

system operation.

19.   Referring to claim 20, Frey teaches subset including operations such as parity

update (See Col. 5, lines 41-43). A parity update will be deferent every time you

perform the operation because the data is different, this is interpreted as the operation

being non-idempotent.

20.   Referring to claims 21 and 22, Frey teaches the log file spanning both volatile

and non-volatile memory (See Col. 3, lines 31-32).

21.   Referring to claim 23, Frey teaches a file-based transaction system that includes

a transaction log (See Col. 1, lines 9-12). Frey discloses the system performing file

transactions using user-inaccessible software, this is interpreted as receiving a request

to perform a file system operation and making a call to an underlying file system to

perform the file system operation (See Col. 3, lines 22-43). Finally Frey teaches the use

of a transaction log file to keep track of the progress of all pending transactions and the

log file can be used to reconstruct in case of a failure of the system, this is interpreted

as logging the file system operation to a log within a log device to facilitate recovery of

the file system operation in the event of a system failure before the file system operation

is committed to non-volatile storage (See Col. 4, line 53 to Col. 5, line 10).

        Frey also discloses the types of transactions including a distributed type of

transaction that includes several nodes and each server maintains its own independent

log, this is seen as each server has a log file that records all the information of the

distributed transactions, which includes the transaction information that occurs on

separate servers (See Col. 5, lines 53-56). This is interpreted as the receiving

mechanism is located within a primary server in a highly available system, wherein the

log device is located within a secondary server that is separate from the primary server

in the highly available system and acts as a backup for the primary server.

22.   Referring to claim 24, Frey discloses the use unique identification numbers for

the transactions in the log (See Col. 5, lines 34-35).

23.   Referring to claim 25, Frey teaches the use of a commit procedure, this is

interpreted as freezing ongoing activity and making a call to the file system to flush

memory buffers to non-volatile storage, which guarantees operations are committed to

non-volatile storage and later unfreezing ongoing activity (See Col. 5, lines 23-33). Frey

also teaches that all old completed transactions are discarded, this is interpreted as

removing outstanding file system operations from the log (See Col. 5, lines 11-12).

24.   Referring to claim 26, Frey discloses a recovery procedure that involves reading

the log file, this is interpreted as upon a subsequent computer system startup examining

the log within the log device (See Col. 9, lines 38-39). Frey also teaches the log file

being used to reconstruct the system, this is interpreted as replaying any file system

operations from the log that have not been committed to non-volatile storage (See Col.

5, lines 4-7).

25.   Referring to claim 27, Frey teaches defining the sequence of actions to be
carried out in the transaction, this is interpreted as checking for dependencies between
file system operations and ongoing file system operations, and if detected ensuring
completion is done in an order that satisfies the dependencies (See Col. 5, lines 41-43).

26.   Referring to claim 29, Frey teaches the use unique identification numbers for the
transactions in the log (See Col. 5, lines 34-35), and defining the sequence of actions to
be carried out in the transaction, this is interpreted as associating the file system
operation with a transaction identifier for a set of related file system operations and
wherein logging the file system operation involves storing the file system operation with
the transaction identifier to the log device (See Col. 5, lines 41-43).

27.   Referring to claim 30, Frey discloses logging transactions and defining the
sequence of actions to be carried out in the transaction, (See Col. 5, lines 3-4 and lines
41-43). This is interpreted as determining if the file system operation belongs to a
subset of file system operations that are subject to logging and if so, logging the file
system operation.

28.   Referring to claim 31, Frey teaches subset including operations such as parity
update (See Col. 5, lines 41-43). A parity update will be deferent every time you
perform the operation because the data is different, this is interpreted as the operation
being non-idempotent.

29.   Referring to claims 32 and 33, Frey teaches the log file spanning both volatile

and non-volatile memory (See Col. 3, lines 31-32).

Response to Arguments

30.   Applicant's arguments, see page 11 of amendment, filed October 18, 2004, with

respect to the drawings have been fully considered and are persuasive. The objection

of the drawings has been withdrawn.

31.   Applicant's arguments, see page 11 of amendment, filed October 18, 2004, with

respect to the specification have been fully considered and are persuasive. The

objection of the specification has been withdrawn. The examiner wishes to note that

missing page 8 of the specification is now included in the case as an appendix to the

response filed October 18, 2004.

32.   Applicant's arguments on pages 11 and 12 of amendment filed on October 18,

2004, with respect to the 35 U.S.C. 102(b) rejection of claims 1-33 been fully considered

but they are not persuasive. The applicant states that Frey does not teach the log being

on a separate server from the primary server because Frey teaches each server having

its own independent log file. The examiner respectfully disagrees.

        Frey discloses the types of transactions including a distributed type of transaction

that includes several nodes and each server maintains its own independent log, this is

seen as each server has a log file that records all the information of the distributed

transactions, which includes the transaction information that occurs on separate servers

(See Col. 5, lines 53-56). The above rejections have been clarified to include this

reasoning.

Conclusion

33.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joseph Manoskey whose telephone number is (571)

272-3648. The examiner can normally be reached on Mon.-Fri. (7:30am to 4pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JDM
January 6, 2005

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TECHNOLOGY CENTER 2100